

What is claimed is:

1. A power feeding arrangement for electric loads (R) mounted in tires (20) of vehicles, which arrangement comprises

5        – at least one feed coil ( $L_f$ ) arranged in the vehicle (10),  
– at least one receiver coil ( $L_1 - L_4$ ) arranged in the tire (20), and  
– at least one load (R) electrically coupled to the receiver coil ( $L_1 - L_4$ ) via voltage rectifier(s) (31 -34)

**characterized** in that in the arrangement

10      – each receiver coil ( $L_1 - L_4$ ) is tuned with a serial capacitor ( $C_1-C_4$ ) and connected to a voltage rectifier (31-34) whereby the DC output currents produced by each rectifier (31-34) flow to the load (R) via at least one receiver coil ( $L_1 - L_4$ ).

2. The arrangement of claim 1, **characterized** in that the DC outputs of the voltage rectifiers

15      (31-34) are coupled to the load resistor (R) via receiver coils ( $L_1 - L_4$ ).

3. The arrangement of claim 1, **characterized** in that the load (R) is an electronic circuit.

4. The arrangement of claim 1, **characterized** in that the number of receiver coils ( $L_1 - L_4$ ) is  
20 four in each tire.

5. A tire (20) comprising receiver coils according to any previous claim, **characterized** in that the surfaces of adjacent receiver coils ( $L_1 - L_4$ ) overlap so that the received power is essentially independent of the rotation angle of the tire.

25      6. A power feeding method for electric loads (R) mounted in tires (20) of vehicles, in which method  
– at least one feed coil ( $L_f$ ) arranged in the vehicle (10) is used for feeding electrical power,

- at least one receiver coil ( $L_1 - L_4$ ) positioned in the tire (20) is used for receiving the fed power, and
- at least one load (R) electrically coupled to the receiver coil ( $L_1 - L_4$ ) via voltage rectifier(s) (31 - 34),

5 characterized in that

- each receiver coil ( $L_1 - L_4$ ) is tuned with a serial capacitor ( $C_1-C_4$ ) and connected to a voltage rectifier (31 -34) whereby the DC output currents produced by each rectifier (31 - 34) flow to the load (R) via at least one receiver coil ( $L_1 - L_4$ ).

10 7. The method of claim 6, characterized in that the DC outputs of the voltage rectifiers (31 - 34) are coupled to the load resistor (R) via receiver coils.

8. The method of claim 6, characterized in that the number of receiver coils ( $L_1-L_4$ ) is four in each tire.

15

9. The method of claim 6, characterized in that the load (R) is an electronic circuit.

10. A tire (20) for a vehicle (10), characterized in that the tire (20) comprises at least one serially tuned receiver coil ( $L_1 - L_4$ ) for receiving electrical power.

20

11. A tire according to claim 10, characterized in that the number of receiver coils ( $L_1 - L_4$ ) is 4 or more.

25 12. A tire according to any previous claim, characterized in that the tire (20) comprises two sets of voltage rectifiers (30).

13. A tire (20) comprising receiver coils according to any previous claim, characterized in that the surfaces of adjacent receiver coils ( $L_1 - L_4$ ) overlap so that the received power is essentially independent of the rotation angle of the tire.